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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LAMB, CHRISTOPHER RAY

ART UNIT

PAPER NUMBER

2627

DATE MAILED: 04/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/624,803	HAYASHI, TOYOFUMI	
	Examiner	Art Unit	
	Christopher R. Lamb	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9 February 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>21 Nov 2005</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The current title is actually misleading. It is "Optical pickup with dual focal length," but as the examiner understands the invention, the optical pickup of the application does not have a dual focal length. The focal length is constant, and the optical pickup must move relative to the disk to focus at different levels (as illustrated in Figures 2A, 2B, and 2C).

The following title is suggested: Optical pickup for recording data and forming label images.

Claim Objections

3. Claim 8 is objected to because of the following informalities: in line 2, "surfaces" should be "surface." Appropriate correction is required.
4. Claim 10 is objected to because of the following informalities: the phrases "a focus servomechanisms" and "the focus servomechanisms" are not grammatically correct. Appropriate correction is required.

5. Claim 17 is objected to because of the following informalities: in line 1, "wherein host computer checks" should be "wherein the host computer checks." Appropriate correction is required.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claim 7 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 7 is drawn to a "program" *per se* as recited in the preamble and as such is non-statutory subject matter. See MPEP § 2106.IV.B.1.a. Data structures not claimed as embodied in computer readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. See, e.g., *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure *per se* held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed computer readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory. Similarly, computer programs claimed as computer listings *per se*, i.e., the descriptions or expressions of the programs are not physical "things." They are neither computer components nor statutory processes, as they are

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not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-9 and 11-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Honda et al. (U.S. Patent Publication 2002/0191517 A1)

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claim 1, Honda discloses an optical pickup (Fig. 6) comprising:
a light source that is provided for generating a laser light (Fig. 6: 66):

an objective lens that condenses the laser light to form a light spot for irradiating an optical disk (the objective lens is not specifically disclosed, but must be included in the optical pickup of Fig. 6: 66; note the laser beam 67 is depicted as forming a light spot) formed of a substrate and having a pair of major surfaces spaced from each other by a thickness of the substrate and a recording face interposed between the major surfaces (Fig. 1: the first major surface is the bottom of the substrate 12; the second major surface lies between the reflection layer 16 and the visible light characteristic changing layer 18); and

an actuator that is provided for moving the objective lens in a direction of the thickness of the optical disk within a total movable range (the focus servo: Fig. 6, 125) so as to focus the light spot on either one of the recording face and the major surface (it can record data, paragraph 37, so it must be able to focus on the recording face. It focuses on the "major surface" between the reflection layer and the visible light characteristic changing layer for label-writing: paragraph 46),

wherein the total movable range of the objective lens is set to be equal to or more than a sum of an allowance range and an additional range (this is inherent, as will be explained in the definition of each part),

the allowance range being set to allow the objective lens to keep a constant distance between the objective lens and the recording face even when a level of the optical disk varies in the direction of the thickness (this is inherent to the focusing operation of paragraph 46: it keeps the focus on the reflection layer, so it must have enough range of motion to allow that to happen),

the additional range being set by dividing a gap between the major surface and the recording face of the optical disk by an absolute refraction index of the substrate of the optical disk (this is also inherent: the apparatus of Honda can write to the recording layer, so it must be able to focus there. Because the optical disk is flipped over when recording data – paragraph 40 – the recording layer is at a different depth, and thus the objective lens, which has a constant focal length, must be in a different position. That different position is inherently the difference in optical path length between the two depths, and that optical path length difference is equal to the thickness of the substrate divided by the refractive index. In the configuration of Fig. 1 of Honda there is also a slight range adjustment due to the protective layer, but note in paragraph 65 that the label layer does not have to be positioned under a protective layer).

Regarding claim 2, it is not specifically disclosed by Honda, but it is inherent. In order to conduct the focusing operation disclosed by Honda, the actuator must be able to switch the objective lens between a first base point and a second base point within the total movable range (one for data recording and one for label recording), such that the objective lens can selectively move around the first base point within the allowance range to allow the light spot to follow the recording face (necessary to stay focused during data recording) or move around the second base point within the allowance range to allow the light spot to follow the major surface (necessary to stay focused during label recording).

Regarding claim 3, it is not specifically disclosed by Honda, but it is inherent. As the focusing operation is conducted on the same optical disk, just reversed depending

on the surface to be recorded, the actuator would logically move the objective lens such that a first movable range of the objective lens extending from the first base point in an inward direction toward the optical disk is set comparable to a second movable range of the objective lens extending from the second base point in an outward direction opposite to the optical disk (the moveable ranges should be comparable because it is the same optical disk either way, so thickness variations should be the same for either direction; that one extends in from a base point and one extends out from a base point is inherent because the base points, as claimed, can be arbitrarily defined anywhere within the focus servo range).

Regarding claim 4, Honda discloses an apparatus for recording information (Fig. 6). Nearly all elements of this claim have already been discussed with regard to claims 1-3, but note Honda discloses a focusing servo section 76, an input section (paragraph 42), and a control section 62.

Regarding claim 5, in Honda the control section operates when the input section designates one of the major surfaces as a label face of the optical disk for instructing the pickup to record information such a manner as to form an visual image on the label face (that the control section is activated is in paragraph 36; that it can be an image is paragraph 41).

Regarding claim 6, this is a method claim corresponding to claim 4, and is rejected for the same reasons.

Regarding claim 7, as the apparatus of Honda is controlled by a host computer (Fig. 6: 46), it must contain a program that causes the optical recording apparatus to

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perform the method. All other elements of this claim have been discussed in the rejection of claims 1-6.

Regarding claim 8, all elements positively recited have been discussed with regards to claims 1-7.

Regarding claim 9, Honda discloses an apparatus for recording data and a visible image (Fig. 6) on an optical disk (Fig. 1) having at least a substrate surface (the substrate is 12; it naturally has two surfaces), a label surface opposite to the substrate surface (the label layer is 18; the examiner considers the "label surface" to be the boundary between 16 and 18), a recording face interposed between the substrate surface and the label surface (14), and a reflection layer disposed under the recording face (16),

the recording face being irradiated by a laser light through the substrate surface to record and reproduce data (implied in paragraph 40), the apparatus comprising:

an optical pickup having an objective lens for irradiating the laser light to the optical disk through the objective lens (Fig. 6: 67);

a feed means for moving the optical pickup in a radial direction of the optical disk (paragraph 38 or Fig. 6: 68);

a spindle motor for rotationally driving the optical disk (Fig. 6: 56); and

a host computer for controlling the recording of the data and the visible image (Fig. 6: 46), wherein

the substrate surface of the optical disk faces to the optical pickup when the data is recorded into the recording face (implied by paragraph 40),

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the label surface of the optical disk faces to the optical pickup when the visible image is recorded into the label surface (paragraph 40), and

a distance between the optical lens and the optical disk is differentiated between a first case of recording the data on the recording face and a second case of recording the visible image on the label surface (this is inherent: the optical lens has to be in a different place since it is focusing at a different depth inside the disk).

Regarding claim 11, Honda discloses that the label surface of the optical disk is coated with a paint for forming the visible image (Honda does not use the word "paint" but the description of its characteristics in paragraph 30 matches the applicant's own description of the paint).

Regarding claim 12, Honda discloses that the spindle motor rotationally drives the optical disk at a constant angular velocity (paragraph 43).

Regarding claim 13, Honda does not explicitly state that the spindle motor rotationally drives the optical disk at a constant linear velocity. However, it is inherent. (Honda discloses – paragraph 10 – that the apparatus can record CD-type optical disks. Since the CD standard requires constant linear velocity recording, the spindle motor of Honda must be able to rotationally drive the optical disk at a constant linear velocity).

Regarding claim 14, Honda discloses that the spindle motor is provided with a frequency generator for outputting a signal for detecting a rotation angle or rotation speed of the optical disk (paragraph 37).

Regarding claim 15, Honda discloses that the optical pickup is vibrated in a radial direction of the optical disk during the course of irradiating the laser light onto the rotated optical disk (paragraph 36).

Regarding claim 16, Honda discloses that the optical pickup is vibrated in a radial direction of the optical disk during the course of irradiating the laser light (paragraph 36), with a predetermined amplitude on every varied cycle, such that the laser light is applied to a same circumference of the optical disk a plurality of times (follows from paragraph 36; if there are no gaps, there must be some overlap between passes due to the vibration).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being obvious over Honda in view of Izumi et al. (U.S. Patent 5,859,824).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject

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matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Honda discloses an apparatus as discussed in the rejection of claim 9. Honda discloses a focus servomechanism (Fig. 6: 76) for focusing the laser light onto the optical disk by means of the objective lens.

Honda does not disclose that the gain of the focus servomechanism is switched between the first case of recording the data on the recording face and the second case of recording the visible image on the label surface.

Izumi discloses that the gain of a focus servomechanism should be switched between the first case of recording data on one recording face and the second case of recording data on the second recording face (column 1, line 66 to column 2, line 7). Izumi discloses that if the gain is not switched, servo control cannot be performed accurately.

It would have been obvious to one of ordinary skill in the art to modify Honda as taught by Izumi to include wherein the gain of the focus servomechanism is switched

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between the first case of recording the data on the recording face and the second case of recording the visible image data on the label surface.

The motivation would have been to perform servo control accurately, as disclosed by Izumi (Izumi's dual layer disk is not the same kind as Honda, but the principle taught by Izumi is equally applicable to Honda, which does have dual recording layers).

12. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Honda in view of Katsuyama et al. (U.S. Patent 4,723,234).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Honda discloses an apparatus as discussed in the rejection of claim 9.

Honda does not disclose wherein the host computer checks if the label surface of the optical disk is set to face the optical pickup when the optical disk is set.

Katsuyama discloses checking to see if the label surface of the optical disk is set to face the optical pickup when the optical disk is set (column 1, lines 19-47).

Katsuyama discloses this can lead to focusing malfunctions (same section).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Honda as taught by Katsuyama to include wherein the host computer checks of the label surface of the optical disk is set to face the optical pickup when the optical disk is set.

The motivation would be to avoid malfunctions, as taught by Katsuyama (Katsuyama is trying to avoid malfunctions while playing the disk, because it cannot be played with the label side the wrong way, but the extension to Honda is obvious: the label cannot be recorded if the label side is set the wrong way).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Onodera et al. (US 2001/0026531 A1), Anderson et al. (US 2003/0161224), Pate et al. (US 2003/0193864 A1).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Lamb whose telephone number is (572) 272-5264. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CRL 3/29/06


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